

ABSTRACT

A impeller shaft assembly is disclosed for use in a
5 refrigerant compressor, and more particularly in a commercial
high-speed centrifugal impeller shaft configuration. The
impeller shaft assembly includes a contoured spacer body. The
contoured spacer body includes a front face, a rear face, a
recessed spring bearing surface in its rear face, and a spring
10 spacing abutment including a shoulder that is seated against a
protective washer. The contoured spacer body functions to
prevent the headed front end of a fastener from coming into
direct contact with a spring assembly and protective washer.
Consequently, the spring assembly and protective washer are not
15 sized to correspond to the cross-section area of the headed
front end as disclosed in the prior art. Instead, the
protective washer and spring assembly are sized to fit the rear
face of the contoured spacer body, which in turn is sized to
fit the front face of a first stage impeller. The contoured
20 spacer body ensures that the clamp load is dissipated across
the front face of the first stage impeller. The contoured
spacer body also provides greater protection to the first stage
impeller during installation and maintenance. In another
embodiment, the contoured spacer body and headed front head are
25 combined to make a contoured front end.